

Smicra (?) *Bergi*.

Long. corp. circa 3 lin.

Male. Black, punctured, sparsely clothed with short bristles; antennæ livid; face and orbits mostly yellow; scutellum unarmed, yellow, completely bisected by a longitudinal black line; legs yellow; hind femora and base of hind tibiæ blackish, the former mostly yellow above and below, and armed beneath with numerous small teeth; abdomen subsessile, rather long and pointed, with three interrupted transverse yellow lines; wings subhyaline, with yellowish nervures. In a second specimen the yellow markings are more extended, the thoracic sutures being marked with yellow, and the pleuræ also with small irregular yellow markings; the hind femora are yellow, black at the tip, this colour extending to the base of the hind tibiæ; and there is a large blackish blotch in the middle, hardly connected with the black at the tip, and shading into smoky brown on the edges.

Female. Similar to the first specimen; antennæ black above; the thorax with small scattered yellow markings; abdomen with four yellow uninterrupted belts.

Buenos Aires. Parasitic on *Æceticus platensis*, Berg.

Not very closely allied to any other species known to me. It somewhat resembles *Conura* in shape, and should perhaps be referred to that genus.

XXIII.—*Contributions towards a General History of the Marine Polyzoa*. By the Rev. THOMAS HINCKS, B.A., F.R.S.

[Continued from vol. xiv. p. 285.]

[Plates VII., VIII., IX.]

XIV. POLYZOA FROM NEW ZEALAND AND AUSTRALIA.

Suborder CHEILOSTOMATA.

Family Bicellariidæ.

DIACHORIS, Busk.

Diachoris elongata, n. sp. (Pl. IX. fig. 1.)

Zoecia large, elongate, somewhat narrowed towards the

oral extremity, suberect, slightly separated, overlapping one another considerably, entirely open in front; oral valve arched above, straight below; two tall and stout spines at the top of the cell, slightly divergent, and five or six on each side, of which the uppermost pair is stouter than the rest and erect, the others slender, acuminate, bent inwards over the area; connecting-tubes six, short; on one side (originating between the second and third spines) an articulated *avicularium*, borne on a rather tall peduncular support, somewhat cup-shaped, expanding very slightly upwards, not swollen below, subtruncate above, the beak but little developed and the projecting extremity not hooked, mandible short, triangular, surface smooth and glossy; dorsal surface convex, smooth, destitute of spines, radical fibre given off from a small tubular projection towards the upper part of the cell. *Oæcium* (?).

Loc. Napier, New Zealand (*Miss Jelly*).

In this species the large size of the cells and the two conspicuous prong-like spines at the summit are characteristic points. But the most striking feature is the *avicularium* (fig. 1 a), which is of a peculiar type, and from the feeble development of its anterior portion (or beak) presents much less of the appearance of a bird's head than is usual amongst the articulated forms. It consists of a cup-like structure of about equal width throughout, from the truncate upper extremity of which the beak projects very slightly; the peduncle is rather long. In form it offers a striking contrast to the *avicularium* of *D. spinigera*, MacGillivray, a kindred Australian species (Pl. IX. fig. 3).

Diachoris quadricornuta, n. sp. (Pl. IX. fig. 2.)

Zoëcia placed very closely together (smaller and more compact than those of the last species), slightly expanded below, narrowed above, overlapping (but not so much as in *D. elongata*), entirely open in front; at the top four moderately sized blunt spines, and on each side from six to nine, set very closely together and bending inwards, with the exception of the two uppermost, which are larger than the rest and suberect; connecting-tubes six, very short; a little below the top on one side an articulated *avicularium* of the same type as that of *D. elongata*, but smaller; peduncle very slender; beak more prominent than in the last species, sloping upwards towards the free projecting extremity; mandible pointed, rather long and slender. Dorsal surface smooth, without spines. *Oæcium* (?).

Loc. Australia (*Miss Jelly*).

This is a smaller species than the last, and the cells are more closely packed together than in *D. elongata*, and less erect. There is a great difference in the spinous armature of the two forms, and their avicularia are unlike. At the same time the two species are closely allied.

Diachoris costata, Busk. (Pl. IX. fig. 4.)

I have received specimens of this species from the Falkland Islands (the station at which it was obtained by the 'Challenger' expedition), growing on one of the red weeds. They exhibit a peculiarity which is not noticed by Busk. Gigantic avicularia are present here and there on the marginal or outside cells, two or three times as large as those which are borne on the inner cells. This is common amongst the *Bugule*, to which *Diachoris* is most closely allied. These avicularia are short and very thick, and of equal width throughout; the beak is not prominent, rising very little above the top of the subjacent chamber (Pl. IX. fig. 4 a). There seems to be a certain definiteness in the mode of growth in this form (as in other species of *Diachoris*), which, indeed, we might expect.

Diachoris Magellanica, Busk. (Pl. VIII. fig. 2 a-d.)

Busk describes the mouth of this species as circular, with a thickened, annular peristome*. As Waters has already pointed out, this is an error†; the orifice is arched above and straight below. But when the operculum, which has a thickened edge on the *inner* side, is thrown open, it presents exactly the appearance described by Busk (Pl. VIII. fig. 2 c), and probably this may be the explanation of the mistake.

The avicularium of this species is very remarkable; it is of great length, slender, and with very graceful outline. The anterior portion is carried out into a long neck-like extension, slightly bent at the extremity. The mandible is long, with a triangular base and attenuated above. The area behind the mandible is very large.

The genus *Diachoris*, as originally defined by Busk, must be regarded as a purely artificial division. But most of the forms which have been ranked under the name present well-marked characters, of much significance, and are properly associated as a natural group. They have the cell of *Bugula* and are furnished with the capitate and articulated avicularium so characteristic of that genus. Indeed it is very questionable

* Brit. Mus. Catalogue, part i. p. 54; 'Challenger' Polyzoa, part i. p. 59.

† "Bryozoa of the Bay of Naples," 'Annals' for Feb. 1879, p. 121.

whether there is any valid ground for separating them from it. The disjunct cells and the more or less decumbent habit are the only characters that could be relied on as distinctive. The first and more important of these would seem to have little real significance, for it occurs as an occasional condition in species the cells of which are normally continuous. We have an instance of this in the disjunct form of the well-known *Microporella Malusii*, described in this paper. The second of the characters referred to is absolutely unimportant. Probably the natural relationships would be best represented by ranking the true forms of *Diachoris* as a subsection of the genus *Bugula*.

One of the species hitherto referred to it, merely because its cells are disjunct, and without any regard to its other and much more important characters, is the *Eschara patellaria* of Moll (= *Diachoris simplex*, Heller), which is an undoubted *Membranipora*. The short connecting processes between the cells vary in number; there are sometimes six of them, sometimes (as in the form *multijuncta* of Waters) nearly a dozen.

So far as this portion of the structure is concerned, there is no essential difference between *Eschara patellaria* and *Schizoporella argentea*, mihi (noticed in this paper), or the disjunct form of *Microporella Malusii*, before referred to.

Busk, in his 'Catalogue,' places the genus *Diachoris* in the family Flustridæ, and holds to this arrangement in his 'Challenger' monograph; but, in my judgment, it has much closer affinity with the Bicellariidæ. The purely membranous, more or less boat-shaped cell agrees exactly with that of *Bugula*, whilst the articulated avicularium is an essentially Bicellarian character. In the Flustrine group this appendage exhibits a much humbler structure and the simplest primary forms prevail.

I add a list of the known species and varieties of *Diachoris* as just defined:—

<i>Diachoris crotali</i> , <i>Busk</i> .	<i>Diachoris armata</i> , <i>Heller</i> .
— <i>Magellanica</i> , <i>Busk</i> (=D.	— <i>spinigera</i> , <i>MacGillivray</i> .
<i>Buskei</i> , <i>Heller</i>).	— <i>decumbens</i> , <i>MacGillivray</i> *.
— —, var. <i>distans</i> , <i>Busk</i> ('Chal-	— <i>Buskiana</i> , <i>Hutton</i> .
<i>lenger</i> ' <i>Monograph</i>).	— <i>bilaminata</i> , <i>Hincks</i> .
— <i>inermis</i> , <i>Busk</i> .	— <i>distans</i> , <i>Hincks</i> .
— <i>costata</i> , <i>Busk</i> .	— <i>intermedia</i> , <i>Hincks</i> .
— <i>hirtissima</i> , <i>Heller</i> (<i>Chaunosia</i> ,	— <i>elongata</i> , <i>Hincks</i> .
<i>Busk</i>).	— <i>quadricornuta</i> , <i>Hincks</i> .
— —, form <i>robusta</i> , <i>Hincks</i> .	

* MacGillivray places this form under *Brania*; but the presence of avicularia and the mode in which the cells are united, which differs essentially from that which is met with in the latter genus, seem to connect it with *Diachoris*.

Family **Membraniporidae**.**MEMBRANIPORA**, De Blainville.

Membranipora valdemunita, n. sp. (Pl. VII. fig. 2.)

Zoecia pyriform, quincuncial, of a delicate vitreous material, area occupying more than three fourths of the front, elongate-oval, wholly membranous, with a slightly thickened and crenulate margin, on each side a little below the top a single spine, cell produced below the area, and on this portion of it a prominent central knob or (occasionally) two, one on each side. *Oecium* rounded, surface smooth, a subtriangular space in front bounded by raised lines, a median line passing from the centre of the oral arch backwards. *Avicularia* distributed amongst the cells and replacing them, occasionally about as large as the cell, usually much smaller, elongate, narrow, subspatulate, margin thin and elevated round the sides and anterior extremity; a strong denticular process on each side at the origin of the mandible.

Loc. Napier, New Zealand (*Miss Jelly*).

In many cases the produced portion of the cell below the area is wanting, or nearly so, and it then appears simply elongate-oval in form, but normally it would seem to be distinctly pyriform, as stated in the diagnosis. The avicularia are generally placed singly, but sometimes occur in clusters of three.

Membranipora hians, n. sp. (Pl. VII. fig. 5.)

Zoecia quincuncial, short, arched and contracted above expanding slightly downwards, or subquadrate, sides much elevated, minutely granular, margin thin, not beaded, on each side, at the top, a stout spine; front wall wholly membranous, oral valve very large, arched above, straight below, bordered by a chitinous edging, and with a broad membranous expansion round the upper part of it; on the lower margin of the area a broad slightly projecting lobe bearing numerous minute spines or prickles, enclosed by the membranous wall. At the base of the cells (on an intercellular space) a pointed *avicularium* (sometimes two) borne on a prominent umbo. *Oecium* massive, very much broader than high, with a wide and shallow oral arch; surface uneven, often bearing one or two pointed *avicularia*.

Loc. New Zealand (*Miss Jelly*).

In this species the wall surrounding the area is much elevated, and the membranous covering appears depressed. There is a peculiarity in the oral valve; it is placed some way

below the top of the area and is supplemented by a broad membranous extension, which closes in the upper part of the cell. The prickly lobe on the lower margin is nearly concealed by the membranous wall of the area, which over-spreads it.

Membranipora acuta, n. sp. (Pl. VII. fig. 6.)

Zoecia more or less distant and commonly separated by reticulated interspaces, clavate or pyriform; area regularly oval, or elongate-oval, wholly covered in by membrane, orifice at the very top of it, margin moderately raised and very delicately beaded; the cell produced below the area and terminating in a pointed extremity (this is often concealed, and the zoecium appears simply oval); at the summit of each cell an *avicularium*, with triangular mandible, directed upwards, borne on a tubercle, which often occupies the centre of the reticulated interspace (Pl. VII. fig. 6). *Oecium* rounded, about as broad as high; surface smooth, a thickened border round the oral arch, which is rather high and slightly receding; at the base of the ovicell and partly imbedded in it one of the avicularian tubercles.

Zoarium vitreous and subhyaline.

Loc. New Zealand (*Miss Jelly*).

The interspaces are frequently not reticulated, or very slightly so. In some cases they are of large size and occupied by a number of tubercles, with an orbicular orifice on the summit; the usual aviculiferous tubercle is also present. Frequently a line passes backward from the oral arch of the oecium, and gives a somewhat bilobate appearance to the front of it; but this appearance is much exaggerated in the figure (Pl. VII. fig. 6, *a*). The pointed lower extremity of the cell (Pl. VII. fig. 6, *b*) is often concealed.

Family **Microporellidæ.**

MICROPORELLA, Hincks.

Microporella Malusii, Audouin, form *disjuncta*.

(Pl. VII. fig. 4.)

Zoecia disjunct, each of them connected by very short processes with six others; surface smooth, glossy, and porcellaneous; one of the anterior oral spines frequently forked.

Loc. New Zealand (*Miss Jelly*).

Microporella diadema, MacGillivray, form *angustipora*.

(Pl. VIII. fig. 3.)

In this variety the pore is placed vertically, and is very

narrow and slit-like, with a slight border surrounding it. The surface of the cells is strongly areolated, the areolations radiating from the base towards a prominent ridge, which crosses the cell just below the pore, and partially shuts it in. There is an avicularium on one side or on both, a little below the orifice, with produced pointed mandible directed almost straight outwards.

There is a remarkable change in the shape of the pore in this variety. In the normal state it is placed transversely, and is elliptical in form, sometimes slightly flattened on one side, and altogether of larger size (Pl. VIII. fig. 3 a) *; here it is a mere slit and directed vertically. There are differences, too, in the size and position of the avicularia, which in the variety are of very considerable length, placed high up on the cell, and directed outwards. In the more usual form they are smaller, some way below the orifice, and directed obliquely downwards. The sculpture in the present variety is also very striking.

Family Myriozoidæ.

SCHIZOPORELLA, Hincks.

Schizoporella biserialis, n. sp. (Pl. VII. fig. 3.)

? *Schizoporella arachnoides*, MacGillivray, 'New or Little-known Polyzoa,' part iii. p. 2, fig. 4.

Zoæcia ovate (irregular in form), ventricose, deeply sutured, whitish, surface thickly covered with small punctures; orifice arched above, straight below, with a central sinus of moderate size, rounded below and not contracted at the opening; peristome not raised, bearing 14–16 tall erect spines, set closely together; on each side (almost in a line with the lower margin) frequently a single detached spine at a short distance from the orifice; round the base of the cell at its upper extremity, and not extending below the orifice, a second series of spines (about ten), tall, slender, and recumbent. *Avicularia* none. *Oæcium* subglobular, surface smooth and dense, three spines on each side in front of it.

Loc. Napier, New Zealand (*Miss Jelly*).

Schizoporella cribrillifera, n. sp. (Pl. VIII. fig. 5.)

Zoæcia small, short-ovate, very irregularly disposed (turned in all directions), decidedly convex, distinct, surface roughened and furrowed, often strongly areolated, the areolations radi-

* This figure is taken from a cell which (in common with the whole colony to which it belonged) was very slightly calcified.

ating from the base to a point below the sinus, which is sometimes occupied by an umbonate projection, the dividing lines prettily beaded; orifice arched above, lower margin straight, with a deep narrow sinus in the centre, slightly enlarged below and not contracted at the opening; peristome elevated round the top and sides of the orifice; many *avicularia* (of various sizes), elongate, subspatulate, scattered amongst the cells, mandible flattish. *Oecium* large, of considerable breadth (broader than high), rounded above, extended in front so as to enclose the orifice, bearing a cribrillated area, surrounded by a raised border, elongate or semicircular; the surface immediately around the perforated area smooth and lineated longitudinally, the rest roughened.

Zoarium white and glassy; surface rendered uneven by the prominent zoecia.

Loc. Cook's Straits, New Zealand, investing the stems of a *Sertularella* (*Miss Jelly*).

In this species the surface is roughened by the prominent cells of the superficial layer, which stand out like little hillocks upon it. Amongst these are numerous deep shaft-like openings, at the bottom of which the orifices of the subjacent cells are visible. The surface of the zoecia is glistening, granulose, traversed (commonly) by radiating and beaded ridges, which mark the course of the areolæ. There is no regularity of arrangement; the cells are strewn about without definite plan, scarcely two are placed alike. The orifice, with its very characteristic sinus, is walled in, except in front, by the elevated peristome, which frequently rises into mucronate projections at the sides. The enclosed and perforated area on the front of the ocell is a curious feature. The opening is traversed by a central rod, giving off short branches at intervals, which pass to the sides and thus form a number of small orifices, through which the water must have free access to the interior of the oecium (Pl. VIII. fig. 5). Jullien describes* a somewhat similar structure in his *Schizoporella Fischeri*; but in this case the ocellal opening seems to be closed by a simple plate pierced with minute holes.

Schizoporella scintillans, n. sp. (Pl. IX. fig. 7.)

Zoecia quincuncial, highly calcified, ovate, moderately convex (sutures shallow, the boundaries obliterated in the older portions of the colony), front wall depressed below, rising gradually towards the oral region; surface porcella-

* "Dragages du Travailleur: Bryozoaires," Bull. de la Soc. Zool. de France, t. vii. (1882).

neous, thickly covered with nodular risings, highly polished and glistening, more or less punctured round the margin; orifice arched above, lower margin straight, with a rather deep central sinus, rounded below and not contracted above; peristome extended and elevated in front, so as to form a semi-circular wall immediately below the sinus stretching from side to side; oral spines six or seven, the foremost on one side (? or on both), antenniform, composed of pieces fitting one into the other; frequently a raised circular *avicularium* towards one side of the orifice, sometimes replaced by one with an elongate pointed mandible, which stretches up alongside the orifice. *Oocidium* rounded, imbedded towards the base in the nodular crust, sloping steeply down from the summit towards the orifice, and produced in front into a lobe (slightly hollowed on the sides), which completely shields the entrance; surface smooth, glassy, delicately lineated.

Zoarium white; the crust piled up to a great thickness in the older portions, so that the cell-boundaries disappear and the orifices are deeply immersed.

Loc. New Zealand, on shell (*Miss Jelly*).

Schizoporella lucida, n. sp. (Pl. IX. fig. 5.)

Zoecia ovate, depressed, bounded by raised lines; surface roughened and minutely punctured, silvery; orifice much broader than high (elongated transversely), arched above, lower margin straight, with a small rounded sinus in the centre; peristome thin, elevated round the upper part of the orifice; on each side, a little below the inferior margin, a blunt spinous process. *Oocidium* large, rounded above, very much broader than high (almost reniform), the basal portion invested by a belt of dull whitish calcareous crust; on the front surface a semicircular space, smooth and silvery, with a line of punctures round the border and a few scattered over the area; the orifice in the ovicelligerous zoecia walled in at the sides by an extension of the peristome, and in front by two calcareous plates or lobes, which bend inwards and unite above, leaving a circular foramen below. *Avicularia* none.

Loc. Australia, on weed (*Miss Jelly*).

There is a great difference in appearance between the cells which are furnished with the oocidium and those which are not; the former are eminently picturesque. The two solid spinous processes below the orifice are scarcely apparent when the ovicell is present, but they are a notable feature in the younger cells.

Schizoporella circinata, MacGillivray. (Plate VII. fig. 1.)

Loc. Napier, New Zealand (*Miss Jelly*); Victoria (*MacGillivray*); off Inaccessible Island, Tristan d'Acunha (*'Challenger' Exped.*).

The figure of this species was prepared before I had recognized the identity of the New-Zealand form with MacGillivray's species. Indeed the specimens which I have examined differ in some important particulars from his description and figure.

Instead of the single line of punctures round the margin there is usually a belt of them on each side of the cell, the central portion remaining smooth*. The peculiar avicularium is not noticed by MacGillivray, nor is the broad ridge-like mucro, rising into a point in the centre, which crosses the cell a little below the orifice. The ovicell is peculiar in shape, elongate, prominent, much elevated behind, narrowing off rapidly towards the very small orifice, perfectly smooth, faintly areolated round the margin (Pl. VII. fig. 1, a). Busk (*'Challenger' Monograph*, p. 166) describes a "curious movable appendage jointed to the operculum," with which a "minute fasciculus of muscular fibres" is connected.

HIPPOTHOA, Lamouroux.

? *Hippothoa*, n. sp. (Pl. VIII. fig. 4.)

The form represented in the figure referred to above bears a very close resemblance to the northern *H. expansa*, Dawson, if it be not identical with it. It also reminds us of some of the numerous forms of the ubiquitous *Schizoporella hyalina* which Prof. Smitt associated with *Hippothoa*. I must defer further consideration of it for the present and merely call attention now to the curious secondary cells (?) with which it is furnished. These are minute, somewhat clavate in figure, with a small roundish orifice at the extremity, and are attached in considerable numbers to the normal cells. Frequently one is placed on each side of the orifice.

It is difficult to conjecture what their function may be, but they may remind us of the rudimentary cells, often very small, which are present on *S. hyalina*, though these are much more highly developed.

Loc. Napier, New Zealand.

* My own figure is incorrect in representing the punctures as generally distributed over the surface. The central portion of each cell is usually occupied in great part by the oecium of the cell below it, or by the large avicularium, and (as a consequence probably) is always imperforate and smooth.

Family *Escharidæ* (part.), Smitt.*LEPRALIA*, Johnston (part.).*Lepralia cincta*, n. sp. (Pl. VIII. fig. 6.)

Zoæcia quincuncial, subovate, or linear oblong, or six-sided, wide in the middle and narrowing off towards the top and bottom, surrounded by conspicuous raised lines, slightly convex (sutures shallow), depressed below, rising towards a very prominent umbo immediately below the orifice; surface punctured and nodulated; orifice arched and expanded above, contracted below, constricted by a denticle on each side, just above the lower margin, which curves slightly outwards; operculum black and glossy; frequently a small pointed *avicularium* on the umbo. *Oæcium* shallow, but of great width, the oral margin almost straight, surface uneven, punctured, sometimes bearing an umbo, extended in front so as to form a prominent wall-like enclosure round the orifice, with a circular foramen in the centre of it.

Zoarium of a dark brown colour.

Loc. Napier, New Zealand (*Miss Jelly*).

Lepralia subimmersa, MacGillivray. (Pl. VIII. fig. 1.)

The figure shows the structure of the orifice. In the specimen from which it was taken the surface is beautifully reticulato-punctate. The species forms large spreading crusts of a rich orange colour.

Loc. Warrnambool (*Watts*); Port Phillip Heads (*J. B. Wilson*).

XV. CHEILOSTOMATA.—MISCELLANEOUS.

Family *Myrizoidæ*.*SCHIZOPORELLA*, Hincks.*Schizoporella argentea*, Hincks. (Pl. IX. fig. 6.)

[*'Annals,'* for Feb. 1881, pl. ix. fig. 6.]

An examination of the dorsal surface of this beautiful species shows that it presents a peculiar and very curious structure, and that its mode of attachment must be different from that which is usual amongst its congeners. The cells (at the back) are separated and isolated by a deep suture and elongate-oval in form. The surface is smooth, glassy, and shining; an elliptical opaque white patch occupies the centre (Pl. IX. fig. 6 *a*); set round the edge are six prominent

tubular projections, with which probably some chitinous appendage may be connected. In the suture between the cells are six rather large foramina, which pierce through the zoarium and open out on the front surface, so that the zoœcia may be regarded as, to some extent, disjunct, and attached to one another by six broad connecting processes. The connecting portions (which are within the suture) are prettily areolated or scalloped.

Loc. Africa, Tahiti (*Miss Jelly*).

Family Membraniporidae.

MEMBRANIPORA, De Blainville.

Membranipora trifolium, form *minor*, Hincks.
(Pl. VIII. fig. 7.)

[‘Annals’ for July 1880, pl. xi. fig. 6.]

In the account of this variety in a previous paper I have described the avicularium as pointed, but I had only a worn and imperfect specimen to deal with, and I am now convinced that this was an error. Miss Jelly has supplied me with a fine example of the same form from Tahiti, in which the avicularia are undoubtedly oval. In this respect it differs from *Membranipora trifolium*, Busk, as well as in the greater abundance of the avicularia (which are placed at the bottom of the cells) and the smaller size of the zoœcia. The oœcium I have not seen. On the whole it seems better to regard it, for the present at least, as a variety of the Crag species.

Loc. Bahia; Tahiti (*Miss Jelly*). *M. trifolium* has the following range:—Great Britain (north); Labrador; St. Lawrence; Spitzbergen, Greenland, Norway; Coralline Crag.

Family Escharidæ, Smitt.

LEPRALIA, Johnston (part.).

Lepralia gigas, n. sp. (Pl. IX. fig. 8.)

Zoœcia gigantic, quincuncially arranged, separated by delicate raised lines, rather irregular in shape, often elongate and rectilinear-oblong, or rounded and expanded above, narrowing off towards the truncate base, sometimes comparatively short, much depressed, almost perfectly flat; surface covered thickly with rather large punctures, which are surrounded by small nodular risings; orifice ample, placed some way below the top of the cell (the border surrounding it strongly granulated), arched above, the lower margin curved slightly

outwards, constricted a short distance above it, opercular denticles prominent; peristome not elevated, unarmed. On one side of the orifice, about halfway between the upper and lower margins, an *avicularium*, with shallow subtriangular mandible, directed outwards. *Oæcium* (?).

Loc. Trincomalee (own collection).

The avicularium of this species is furnished with a shallow mandible, which is blunt above, and has much the appearance at first sight of being semicircular; it is, however, correctly described as subtriangular.

The large size of the cells and the flat surface are characteristic points.

Lepralia vestita, n. sp. (Pl. IX. fig. 9.)

Zoecia ovate, quincuncial, convex (sutures rather deep), surrounded by a very slight interstitial line, completely invested with a glossy brown epidermis, beneath which the surface is white and granular (the granules show as indistinct spots through the epidermis); orifice taller than broad, arched above, the lower margin curved outwards, a slight constriction immediately above it; peristome much elevated round the orifice, suberect (forming a kind of shaft), margin white, thin, unarmed; on one side of the orifice or on both sides a pointed *avicularium*, leaning against the peristome and directed obliquely upwards. *Oæcium* rounded, very broad, moderately convex, placed behind the subtubular peristome, and covered by the shining epidermis.

Loc. Tahiti (*Miss Jelly*); Fiji Islands, on *Pinna* (own collection).

In a young state the cell is covered with minute punctures.

Lepralia Poissonii, Audouin.

Two forms of this species occur; in one the vibracula are situated below the orifice and are placed horizontally, in the other they are vertical and placed at the side of the orifice near the top of it and close to the margin. There are also slight differences in the *oæcium*, but they are unimportant. In a specimen from the New-Zealand Tertiaries the orifice is very small and the vibracula are placed a good way down the cell, with a prominent central umbo between them. In the original figure by Savigny the vibracula are represented *below* the orifice, and the ovicells as traversed by lines (? ridges) radiating from the top towards the opening. These variations are interesting, but have no special significance.

There are as many as from twelve to fourteen of the tall slender spines round the base of the cell in perfect specimens.

Loc. Bass's Straits (*Capt. Warren*); Tahiti (both forms); New Zealand (both forms); New-Zealand Tertiaries, var. (*Miss Jelly*).

NOTE.—Since the foregoing was in type I have received a paper from Mr. MacGillivray, in which he notices several variations in the pore of *Microporella diadema*.

EXPLANATION OF THE PLATES.

PLATE VII.

- Fig. 1. Schizoporella circumata*, MacGillivray. Zoecia, showing the avicularia and the suboral ridges. [The punctures are represented as distributed over the whole surface of the cell; but in reality the central portion is destitute of them and perfectly smooth, as in figure 1 a.] 1 a. Cell with oecium.
- Fig. 2. Membranipora valdemunita*, n. sp. 2 a. Cell with oecium.
- Fig. 3. Schizoporella biserialis*, n. sp.
- Fig. 4. Microporella Malusii*, Audouin, form *disjuncta*, n. sp.
- Fig. 5. Membranipora hiuns*, n. sp.
- Fig. 6. Membranipora acuta*, n. sp. 6 a. Cells with oecia. [The bilobate appearance of the ovicell seems to be a mere abnormal peculiarity; it does not occur generally.] 6 b. Cells, showing the prolongation below the area.

PLATE VIII.

- Fig. 1. Lepralia subimmersa*, MacGillivray. 1 a. Oecium.
- Fig. 2 a. Diachoris Magellanica*, Busk. Cell with avicularia. 2 b, 2 d. Avicularia, showing structure. 2 c. Orifice, closed and open.
- Fig. 3. Microporella diadema*, MacGillivray, form *angustipora*, n. 3 a. Normal.
- Fig. 4. Hippothoa* ? sp., showing the secondary cells.
- Figs. 5, 5 a. Schizoporella cribrillifera*, n. sp.
- Fig. 6. Lepralia cincta*, n. sp. 6 a. Oecium.
- Fig. 7. Membranipora trifolium*, Busk, form *minor*, Hincks.

PLATE IX.

- Fig. 1. Diachoris elongata*, n. sp. 1 a. Avicularium.
- Fig. 2. Diachoris quadricornuta*, n. sp. 2 a. Avicularium.
- Fig. 3. Diachoris spinigera*, MacGillivray. Avicularium.
- Fig. 4. Diachoris costata*, Busk. a. Marginal avicularium. b. One of the small avicularia on the inner cells.
- Fig. 5. Schizoporella lucida*, n. sp. 5 a. Zoecium, showing the form of the primary orifice and the suboral processes.
- Fig. 6. Schizoporella argentea*, Hincks. A cell showing the arrangement of the granules on the surface, the form of the avicularium, and two of the intercellular perforations. 6 a. The dorsal surface of the zoecium.
- Fig. 7. Schizoporella scintillans*, n. sp. 7 a. Oecium, showing the screen-like lobe in front. 7 b. Pointed avicularium.
- Fig. 8. Lepralia gigas*, n. sp. [This figure is drawn to a much lower scale than the rest.]
- Fig. 9. Lepralia vestita*, n. sp.